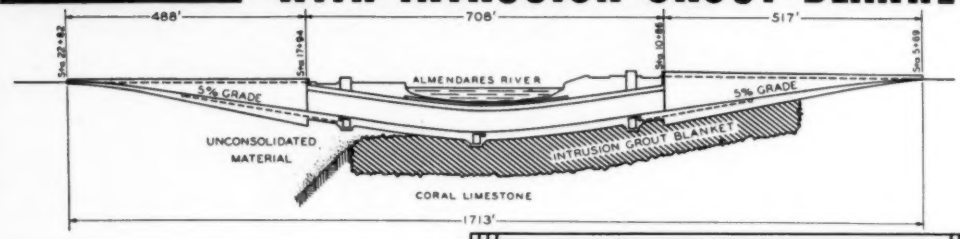
ACI News Letter

Vol. 25, No. 1 JOURNAL of the AMERICAN CONCRETE INSTITUTE September 1953

Highly permeable coral limestone under new Havana tunnel presented costly problem of water control for open cofferdam — so...

PREPAKT SEALS POROUS FOUNDATION WITH INTRUSION GROUT BLANKET

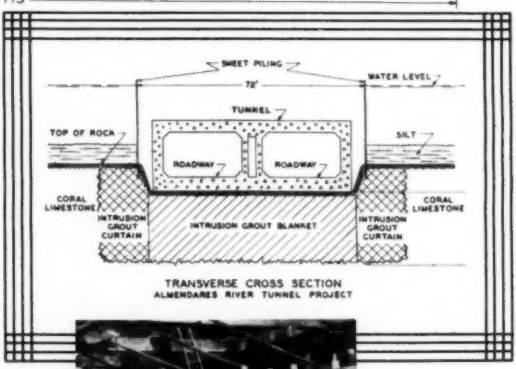


Prepakt's engineering and versatile materials produced a simplified, low-cost solution for water control during construction of the Almendares Vehicular Tunnel, Havana, Cuba. Normal pumping of the open cofferdam in this case would have been difficult and of prohibitive cost.

The porous coral limestone foundation for this twin-barrel, reinforced concrete tunnel was solidified by pumping with INTRUSION grout. This treatment resulted in a horizontal grout blanket 20 to 25 feet thick which effectively sealed the bedrock against water inflow. Some 166,000 sacks of INTRUSION cementing materials were pumped into an estimated 67,000 cubic yards of coral limestone.

The sheet pile cofferdam was then driven and after dewatering excavation was completed in open cut to 38 feet below river surface with no more than minor seepage. Excavation and subsequent operations were not hampered by water or pumping lines and equipment.

The extra strength and high penetrability of INTRUSION grout made this Intrusion-Prepakt project highly successful —saving time, trouble and money.



TRANSVERSE CROSS SECTION
ALMENDARES RIVER TUNNEL PROJECT

Foundation grade, 38 feet below river surface, stays dry after Intrusion grouting.

Drilling and grouting were performed under subcontract to Raymond Concrete Pile Co.

This Intrusion grouting technique is applicable to many foundation problems. For detailed information, contact the Main Office, Room 779-H, Union Commerce Bldg., Cleveland.

CHICAGO • ATLANTA • BOSTON • DENVER
PHILADELPHIA • SEATTLE • SAN FRANCISCO

ZURICH • PARIS • MADRID • STOCKHOLM
HELSINKI • BERLIN • LONDON • HAVANA

CONTRACTORS PREPAKT ENGINEERS

INTRUSION-PREPAKT, INC.
THE PREPAKT CONCRETE CO.

MAIN OFFICE: CLEVELAND 14, OHIO
CANADIAN OFFICE: TORONTO, ONTARIO

ACI
News Letter Contents

September 1953

On the Cover—"All roads lead to Houston" for the Southwest Regional Meeting, Oct. 29-30. Shown here as it approaches downtown Houston is the $28,000,000 Gulf Freeway that links Houston to Galveston.

—*Courtesy Houston Chamber of Commerce*

Southwest Regional Meeting..... 3

Houston sets fast industrial pace..... 5

Positions and Projects—ACI Members..... 6

Who's Who

Committee 711.....17
Edwin J. Callan.....17
Bruce E. Foster.....17
George W. Washa and Paul G. Fluck.....17
David P. Billington.....18

Lift-slab construction.....20

New Members.....23

Honor Roll.....25

Tools, Materials, Services..26

Discussion.....30

List of Advertisers.....30

Southwest Regional Meeting program to emphasize new developments in concrete

Latest developments in concrete uses will be featured on the program of the Southwest Regional Meeting at the Rice Hotel, Houston, Texas, October 29-30. The tentative program as released by Frank W. Chappell, structural engineer of Dallas, program chairman, and the program committee, includes papers on lightweight structural concrete, use of concrete in chemical plants, prestressed lightweight concrete, corrugated box forms for ribbed slabs, and lift-slab construction.

Prof. Phil M. Ferguson, chairman of the Department of Civil Engineering, University of Texas, Austin, and John A. Murlin, Texas Concrete Products Corp., Dallas, are co-chairmen of the event. S. W. Oberg, chief engineer, Humble Oil and Refining Co., Houston, is general chairman of the two-day meeting.

The local committees appointed to handle the various events are: treasurer and exhibits—Herbert Shilstone, chairman, P. C. Stinnett, vice-chairman; technical program—C. A. Bullen, chairman, Walter P. Moore, vice-chairman; publicity—Brown Booth, chairman, Harry Hedges, Jr., W. L. Harrell, George G. Smith; registration and arrangements—J. B. Baird, chairman, H. B. Miller, vice-chairman; inspection—Al Bahn, chairman; ladies entertainment—Mrs. George G. Smith, chairman; permanent secretary—Ed C. Jancik; assistant secretary, Joe F. Moore.

The tentative program is as follows.

TENTATIVE PROGRAM

Thursday a.m., October 29—Frank W. Chappell, chairman

"Minimum Bar Spacing as a Function of Bond and Shear Strength," by Phil M. Ferguson, J. Neils Thompson, and Robert D. Turpin, University of Texas

"Shearing Strength of Anchor Bolts Embedded in Concrete," by S. Thompson, Southern Methodist University

Thursday p.m., October 29—Cedric Willson, chairman

"Design Practice in Lightweight Structural Concrete," by John A. Murlin, Texas Concrete Products Corp., and Robert L. Reid, structural engineer

Continued on p. 4

"Prestressed Lightweight Concrete," by Fred E. Koebel, Prestressing Inc.

Film—"The Selma Story," by Ralph B. Rogers, Texas Industries, Inc.

"Permeability of Lightweight Concrete," by Cedric Willson, Texas Industries, Inc.

"Concrete Pipeway Stanchions," by Archie C. Blackburn, The Dow Chemical Co.

Thursday evening, October 29—Luther Bell, chairman

Movies with comments by authors:

"Construction of a 1,000,000-Gal. Elevated Prestressed Water Tank," by Jean H. Knox, The Preload Co.

"Economy Obtained by the Use of a Precast, Prestressed Concrete Structural System," by G. P. Rackle

"Prestressed Concrete Cylinder Piling Being Used for Off-Shore Work in the Gulf Coast Region," by H. B. Miller

"Low Cost Parking Garage Construction," by John A. Murlin, Texas Concrete Products Corp.

Friday a.m., October 30—Phil M. Ferguson, chairman

"The Dilemma of Prestressing," by W. L. Powell, consulting engineer; rebuttal by Fred E. Koebel

"Ultimate Shear Strength of Prestressed Concrete Beams," by Eugene Zwoyer, University of New Mexico, and C. P. Siess, University of Illinois

"Report of Laboratory Tests of Prestressed Concrete Beams," by Chester R. Best, Louisiana State University

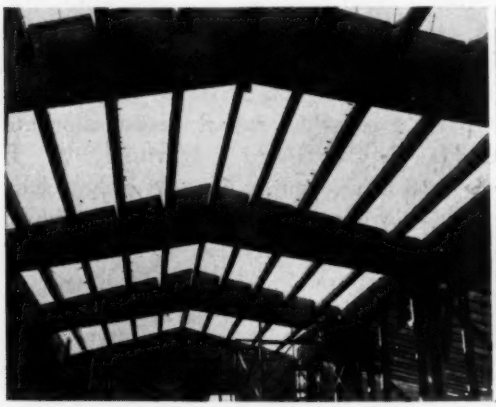
"Control of Plastic Flow in Beams and Slabs by Prestressing," by Adrian Pauw, University of Missouri

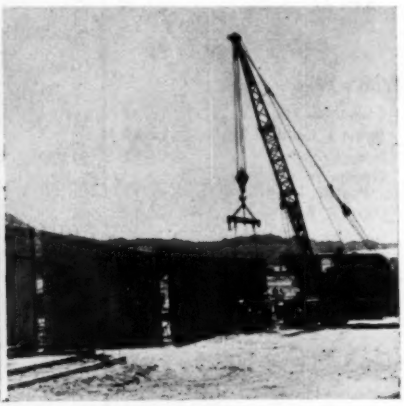
Friday p.m., October 30—John A. Murlin, chairman

"Concrete in the Expressway System of Houston," by W. J. Van London, Texas Highway Department

"Corrugated Box Forms for Reinforced Concrete Ribbed Slabs," by H. C. Pfannkuche, Portland Cement Assn.

"Prestressed Lift Slabs," by M. M. Lemcoe, Southwest Research Institute





Riverside Cement Co. utilizes precast concrete framing and tilt-up construction in plant expansion

Left: Precast roof beams and joists were used in the construction of the Riverside Cement Co.'s new employee facility at Oro Grande, Calif. The 6500 sq ft windowless structure will serve as a combination dressing room, wash and shower room, and lavatory. Wall panels, columns, girders, beams, and roof joists were precast on the concrete floor slabs and then raised into position by cranes. Wall struts and roof slabs were cast in place after the prefabricated members were in position. Right: With the aid of a crane, workmen place a precast wall panel during construction of Riverside's new building. Weights of precast members varied from 1500 lb, the approximate weight of a 19 ft x 14 in. x 5½ in. roof joist, to 8 tons, the approximate weight of a 10 ft x 20 ft x 6 in. wall panel. Architects were Allison and Rible; structural engineers, Ropp and Ropp; contractor, Steed Bros.

Houston—host to Southwest Regional Meeting—sets fast industrial pace

Houston, site of ACI's Southwest Regional Meeting, October 29-30, is admittedly still in its adolescence among the world's industrial giants.

The big industrial surge which began in 1939 found Houston the focal point of an unprecedented program of development and expansion in an area known as the Golden Bend of Texas, stretching from Sabine Pass to the mouth of the Rio Grande.

Given the impetus of World War II, industry found in the Houston area not only the rich natural resources—petroleum, natural gas, sulfur, lime and salt—which they expected, but an energetic labor force, a complete network of highway, rail, and water transportation, an adequate water supply, and an over-all physical and economic condition favorable to continued industrial development. Instead of the leveling off period which was predicted for Houston after World War II, the post war years saw new manufacturing plants being added to the industrial skyline at an even more accelerated rate.

Petroleum must be called the father of industry in Houston and the Houston Ship Channel the mother. Their offspring include the Gulf Coast chemical empire and a metals industry which is trying to keep pace.

Total industrial production in Houston is set at some two and a half billion dollars and capital investments in plants lining the Houston Ship Channel exceed a billion dollars. The busy Port of Houston is consistently ranked as the nation's number two deep seaport, tonnagewise, second only to New York City. The young port handled more than 45,000,000 tons of cargo in 1952. Industrial development has also caused Houston to be ranked 14th in the United States in population, and conferred on it the title of largest city in the South, with a 1953 population of 665,000 within the 163 sq mile incorporated area and 924,000 in Harris county.

Construction program

A tremendous construction program centered in Houston is further proof of the city's industrial prowess.

Houston set a construction record in 1948 when building permits totaled $100,160,322 within its corporate limits which then was 76 sq miles. This was the first time in the history of Texas that a year's building permit total had passed the $100,000,000-mark.

Houston led the nation in 1949 in per capita construction as building permits totaled $82,159,126. Then, in 1950, building permits added up to $176,932,907. Material shortages caused by the Korean war curbed building in 1951, but Houston's total for building permits was at least $131,567,352. (The U. S. Bureau of Labor Statistics set it $6,000,000 higher.) Building permits within the city's corporate limits in 1952 totaled $113,906,805.

Industrial expansion

Houston's metals goods industry, which has been on a steady upgrade during the past decade, was boosted in 1952 by the opening of new plants and the expansion of others. The Tenn-Tex Alloy and Chemical Co. opened a plant which is producing 2500 tons per month of ferromanganese and ferrosilicon, used by the nearby Sheffield Steel Corp. plant in the manufacture of steel. A Chamber of Commerce survey showed a $310,461,000 investment in metals plants in the Houston area, with planned expansion by 1954 amounting to $5,326,000.

Other additions to the metal goods industry in Houston include a plant for producing aluminum products to be built by the General Bronze Corp. of New York, and an oil well supply center planned by U. S. Steel.

Houston's business is served by a vast transportation system of six main trunkline railroads, a modern airport under expansion served by an increasing number of domestic and international commercial airlines, and the Port of Houston. An excellent system of paved highways, including the $28,000,000 Gulf Freeway, giant of concrete and steel which stretches 50 miles to Galveston, supplies the city with smooth, speedy transportation facilities for both personnel and commerce.

Continued on p. 18

Positions and Projects — ACI Members

Young appointed research consultant

R. B. Young, past president of the Institute and ACI honorary member, has accepted a new position as research consultant to the Hydro-Electric Power Commission of Ontario, Toronto, Ont., Canada. Mr. Young is well known to ACI members through his papers and active work on many ACI administrative and technical committees. A member of the Institute since 1917, he was awarded the Wason Medal for the paper "Concrete—Its Maintenance and Repair" in 1937.

The research division of the Commission, of which Mr. Young was formerly associate director and is now research consultant, is conducting applied research in many fields including, chemistry, electricity, metals, mechanics, and structures, and the inspection of concrete and soils structures.

Mr. Young has been actively interested in studies of durability of concrete in service as well as other fields, including concrete control and inspections, winter concreting, construction, and maintenance and repair methods.

At the 56th annual meeting of the American Society for Testing Materials, Mr. Young was presented the Award of Merit for his outstanding committee work.

New testing machine at Lehigh

Lehigh University has announced groundbreaking ceremonies for a new building which will house the world's largest vertical universal testing machine. The new building will house a 5,000,000-lb capacity hydraulic tension-compression machine. Together with auxiliary apparatus it will make possible a vast expansion in the services heretofore offered the East Coast building industry in proof-testing products. Auxiliary machines will permit studies on the effect of repeated dynamic loads which cause failures through the fatigue of materials.

Tests which engineers are expected to bring to the laboratory will include such materials as concrete cylinders and blocks, aluminum and magnesium castings, and fabricated steel.

Masonry home design competition

Public interest in the use of concrete masonry in construction of new homes was stimulated by a $1750 design competition which ended August 15, for which the Nebraska Concrete Masonry Assn. served as donor. Sponsor of the competition was the Nebraska Architects Assn., a chapter of the American Institute of Architects. First prize of $1000 was awarded to the best design for a small concrete masonry home. A second prize of $250 was given along with ten Awards of Merit of $50 each.

LOOKING AHEAD

October 7-10, 1953—32nd Annual Meeting, Western Assn. of State Highway Officials, Hotel La Fonda, Sante Fe, N. M.

October 8-10, 1953—5th Annual Convention, American Concrete Pressure Pipe Assn., Ponte Vedra Inn, Ponte Vedra, Fla.

October 19-21, 1953—35th Annual Meeting and 4th National Standardization Conference, American Standards Assn., Waldorf-Astoria Hotel, New York, N. Y.

October 19-23, 1953—41st National Safety Congress and Exposition, Congress, Conrad Hilton, Hamilton, LaSalle, Morrison, and Palmer House Hotels, Chicago, Ill.

October 19-23, 1953—New York Convention, American Society of Civil Engineers, Hotel Statler, New York, N. Y.

October 29-30, 1953—Southwest Regional Meeting, American Concrete Institute, Rice Hotel, Houston, Texas

February 15-19, 1954—Atlanta Convention, American Society of Civil Engineers, Hotel Biltmore, Atlanta, Ga.

February 22-25, 1954—Golden Anniversary Convention, American Concrete Institute, Shirley Savoy Hotel, Denver, Colo.

Denver committee for ACI's Golden Anniversary Convention meets with Institute officials to outline coming event. Standing (l. to r.) are R. W. Morris, Orley Phillips, I. P. Walton, Ed Sloan, Mrs. E. W. Thorson, Mrs. W. H. Price, Mrs. R. F. Blanks, A. G. Hoyl, R. F. McCune, and Douglas McHenry. Seated behind tables (l. to r.) are S. H. Poe, Henry L. Kennedy, R. F. Blanks, W. A. Maples and W. H. Price. Seated in front of tables (l. to r.) are B. W. Lorance, E. C. Higginson, Damon Runyan, and E. W. Thorson

Denver committee outlines ACI's Golden Anniversary Convention events

"The best in 50 years" is the goal of the Denver convention committee in its planning for ACI's 50th annual convention to be held in Denver, Feb. 22-25, 1954.

These plans were discussed with ACI officials on June 17 in Denver, when President Henry L. Kennedy, Acting Secretary-Treasurer W. A. Maples, and Technical Activities Committee Chairman Douglas McHenry met with the Denver committee headed by R. F. Blanks.

Blanks and his committee members are planning special events for the commemoration of the 50th anniversary of the Institute, and he looks ahead to a registration "even greater than the record we established here in 1948, which still stands."

One major innovation being planned for the meeting next February is the "President's Dinner" to which will be invited leaders in industry, education, science, and government. Exhibits are to be more extensive than before. The technical program will bring to the meetings not only the usual sound technical papers on current developments but will cover in retrospect some of the major advances in the field of concrete technology during the 50-year life of the Institute.

Committee members present were Mr. and Mrs. Blanks, S. H. Poe, B. W. Lorance, A. G. Hoyl, E. C. Higginson, Damon Runyon, O. O. Phillips, R. F. McCune, R. W. Morris, Mr. and Mrs. E. W. Thorson, and Mr. and Mrs. W. H. Price. Also attending the meeting were I. P. Walton, manager of the Shirley Savoy Hotel, to be Denver convention headquarters; and Ed Sloan, representative of the Denver Convention and Visitors Bureau.

T. Y. Lin receives Fulbright Award

Prof. T. Y. Lin, of the University of California, has been granted a Fulbright Award to do research in prestressed concrete at the University of Ghent, Ghent, Belgium, for the academic year 1953-54, under Prof. Gustave Magnel who is director of the concrete laboratory at the university.

The award was presented on the basis of Professor Lin's performance in research and design of prestressed concrete structures. Some of Professor Lin's papers which exemplify his work in this field include "World's Heaviest Prestressed Building Girders," *Civil Engineering*; "Allowable Stresses and Load Factors for Prestressed Concrete," *Proceedings*, Western Conference on Prestressed Concrete, and "Testing of the Arroyo Seco Prestressed Concrete Bridge," University of California.

An ACI JOURNAL author, he also is active in ACI committee work: Committee 115, Research; Committee 207, Properties of Mass Concrete; Committee 210, Resistance to Erosion in Hydraulic Structures; and Committee 611, Inspection of Concrete.

PRESS-UR-METER

FOR TESTING AIR ENTRAINED CONCRETE

COMPACT . FAST . CONVENIENT

GUARANTEED ACCURACY

SAMPLE REMAINS INTACT: Small amount of water used in test permits using same sample for slump and compression tests.

Now in World-Wide Use!

Universal acceptance: U.S. Bur. of Recl., Army, Navy, Public Roads; many St. Highway Depts., Commercial Laboratories, Ready Mix Plants; Major Projects in N. & S. America, Europe and Asia. SPECIFIC GRAVITY and MOISTURE DETERMINATIONS of aggregates quickly made using the NEW CHART now furnished with the PRESS-UR-METER. LET US TELL YOU about this important extra value of the PRESS-UR-METER for testing and designing concrete mixes.

For complete information, write to

CHARLES R. WATTS & CO.

4121 – 6th Ave. N. W. Seattle 7, Wash.

Exclusive sales agents

Bowman named dean at Drexel

H. L. Bowman was recently appointed Dean of Engineering and Dean of Faculty at Drexel Institute of Technology, Philadelphia, Pa. During World War II he served on the National Defense Research Committee and the U. S. Strategic Bombing Survey. He was chairman of the technical teams which appraised the physical effects of strategic bombings in Japan and Germany at the end of World War II, and for his war services received a citation from the War Department and the Medal of Freedom. Since the war he has served as consultant to the Atomic Energy Commission on bomb resistant structures.

Before joining the Drexel faculty in 1926, Dean Bowman was on the engineering faculties of Purdue University and Massachusetts Institute of Technology.

Parme receives award

Alfred L. Parme, staff member of the Structural and Railways Bureau, Portland Cement Assn., Chicago, Ill., was recently awarded the Fuertes Graduate Medal by Cornell University's School of Civil Engineering, Ithaca, N. Y.

The award was presented for his work on the manual "Design of Cylindrical Concrete Shell Roofs," a project of the Committee on Masonry and Reinforced Concrete of the Structural Division of the American Society of Civil Engineers. The gold medal is given annually to Cornell's civil engineering graduate who has published, in that year, the most meritorious technical paper.

Mr. Parme, author of several ACI JOURNAL papers, has contributed to the development of valuable data for the civil engineering profession, especially in the design of storage tanks, rigid frame bridges, arch dams, and on the ultimate strength theory of design.

Last November he went to Japan as a consulting engineer for Overseas Consultants, Inc., where he was in charge of trial load analysis of the Kamishiiba Arch Dam on Kyushu Island.

Mr. Parme is a member of ACI Committee 314, Rigid Frame Bridges, and the Subcommittee on Thin Shell Design of ASCE.

No detail of planning was overlooked in making this new Youth Study Center one of the finest of its kind. Reinforced concrete was selected for the building's framing and floors.

The design includes flat wide beams which span the full width of the building. This framing method permitted a considerable reduction in the total height of the building as compared with conventional deep beams.

Not only did reinforced concrete permit greater flexibility of design, but it also proved *more economical.* Moreover, materials were readily available from local sources.

Reinforced concrete buildings are durable, firesafe, rugged . . . and go *up faster.* On your next job, design for reinforced concrete.

REINFORCED CONCRETE PROVED LESS COSTLY

Youth Study Center, Philadelphia, Pa.
Architects: Carroll, Grisdale & Van Alen
Structural Engineers: Severud-Elstad-Krueger
Contractor: McCloskey & Co.

CONCRETE REINFORCING STEEL INSTITUTE

38 South Dearborn Street
Chicago 3, Illinois

Protex AIR METER . . . .

Improved 1953 Model

Faster . . . Easier . . . Better!

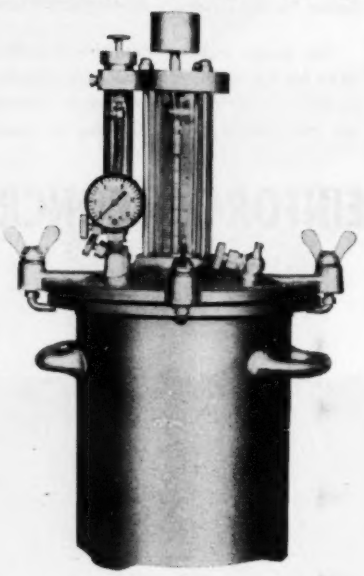
New Refinements on ¼ cu. ft. Air Meter.

Built in Pump, very small amount of water, direct reading, lighter more durable, etc. No supersensitive gauges requiring frequent calibration. Accurate in Laboratory work, rugged for field use, weight only 19 pounds.

PROTEX Air Meter has world wide acceptance and is of the approved type used by Government, State and Private Laboratories, and is known for its accuracy and durability over the past six years.

No special training needed to get accurate results. Comes complete with Strike-off Rod and Standardization Vessel. Lowest in price—only $98.50, F.O.B. Denver. Optional Carrying Case $35.00. ⅓ cu. ft Air Meter also available.

Send for your copy of descriptive literature today.



PROTEX
Autolene Lubricants Company
Industrial Division
DENVER 9, COLO.

ONLY
98.50
FOB DENVER
Carrying Case Extra

WASHO meets in Santa Fe

The 32nd annual conference of Western Assn. of State Highway Officials will be held in Santa Fe, N. M., Oct. 7–10 at the Hotel La Fonda. Attending will be some 120 official delegates from 12 western states, the territories of Hawaii and Alaska, U. S. Bureau of Public Roads, and U. S. Forest and National Park Services. Featured on the technical program will be a discussion of the WASHO Road Test. Some of the various panel discussions will consider investigations on compaction of concrete, prestressed concrete in Western bridge construction, and the sand equivalent test as a method of control for road surfacing aggregate.

Sommerschield joins Hausman Steel Co.

Harold F. Sommerschield has been appointed assistant to R. I. Jervis, manager of the Capitol Steel Division of the Hausman Steel Co. of Toledo, Ohio. Mr. Sommerschield will headquarter in Lansing, Mich.

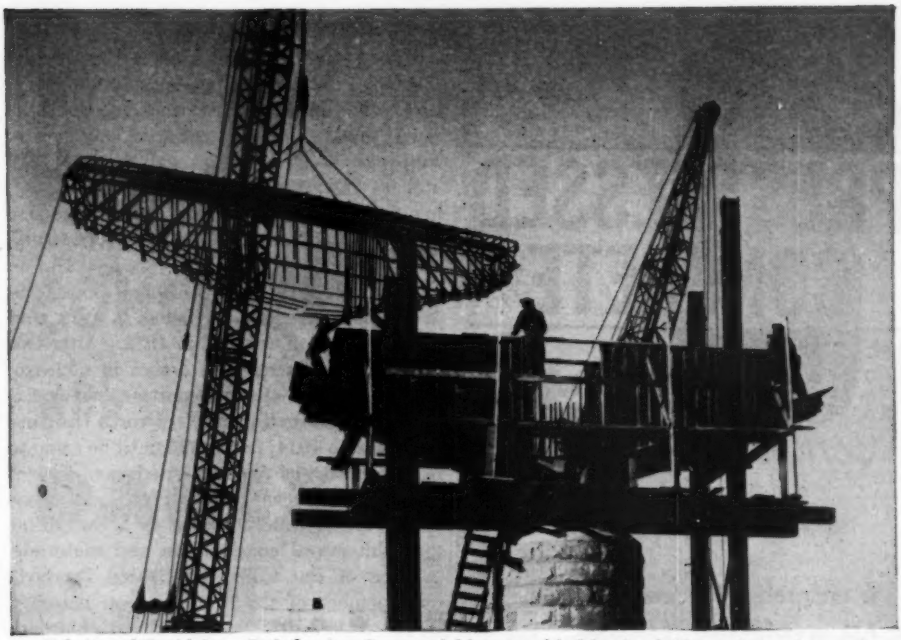
Mr. Sommerschield started his engineering career with Sargent and Lundy in Chicago, Ill., after which he was associated with Harza Engineering Co. for 15 years. He was structural representative for the Portland Cement Assn. for several years during which time he served as lecturer for the quality concrete program of the association. Prior to his leaving Chicago he was chief engineer for Abell-Howe Co.

McIntosh accepts new post

W. J. McIntosh has been appointed district engineer in charge of the New York office of the Portland Cement Assn. Mr. McIntosh joined the staff of the Portland Cement Assn. in 1946 as a field engineer in the Philadelphia district. In 1949 he was appointed regional highway engineer, and since that time has served the Philadelphia and Columbus districts in that capacity.

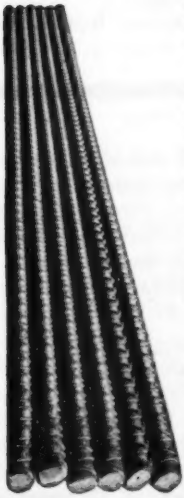
Code opens office in Detroit

Ralph J. Code, formerly with Thompson-Lichtner Co., Inc., Boston, Mass., has announced the establishment of Unit Testing Service in Detroit, Mich. The firm will specialize in concrete and bituminous products inspection.



Fabricated Bethlehem Reinforcing Bars, quickly assembled in the field, are being lowered into the forms of a bridge pier. Bars arrived on the job cut and shaped, ready for use.

THESE FABRICATED BARS SPEED CONCRETING JOBS



You're bound to speed concreting jobs when reinforcing bars arrive at your job-site, ready for instant placing. And you get this service when you specify Bethlehem Reinforcing Bars.

Bethlehem Bars are carefully fabricated to meet your specifications. Just tell us the size, shape, and tonnage you want, and the bars reach the job ready to go to work. They come sheared to exact length, accurately shaped on bending machines, bundled and tagged, with bar lists included.

Only new-billet steel is used in making Bethlehem Bars. They have high, closely-spaced lugs to give them a firm grip in concrete. You'll find that these lugs minimize slippage at working loads.

Try Bethlehem Bars on your next concreting job. For more information, call our nearest sales office—or write to us at Bethlehem, Pa.

BETHLEHEM STEEL COMPANY
BETHLEHEM, PA.

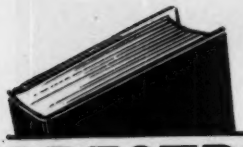
On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation. *Export Distributor:* Bethlehem Steel Export Corporation

BETHLEHEM BAR FABRICATING SHOPS:

BOSTON, MASS.
PHILADELPHIA, PA.
LACKAWANNA, N. Y.
ELIZABETH, N. J.
JOHNSTOWN, PA.
CLEARING, ILL.
SPARROWS POINT, MD.
ST. PAUL, MINN.

BETHLEHEM STEEL

BETHLEHEM REINFORCING BARS



ready now . . .

PRESTRESSED CONCRETE

By YVE GUYON

Consulting Engineer and Technical Advisor to the Societe Technique Pour l'Utilisation de la Precontrainte

Translated by a group of practicing engineers under the direction of W. M. Johns

A comprehensive work covering ALL prestressing systems

PRESTRESSING is probably the most important recent development in the field of civil engineering. Its accuracy, soundness and economy provide new solutions to many hitherto difficult problems of stress and strength.

This important book covers all the basic phenomena of the field and develops their application to the problem of simply supported beams. Guyon provides a masterly summary of information previously scattered in the technical journals of seven countries, plus much entirely new material. All of it is distinguished by its clarity and thoroughness.

Practical Formulas and Tables

Every designer and engineer will appreciate the way in which mathematical treatments are followed with practical formulas and tables. For example, in the sections on stresses in anchorage zones, this important phase of design is finally raised from "rule-of-thumb" status to a place where positive calculation can be applied with full confidence.

Another feature which adds greatly to the practical value of this book is the extensive analysis of numerous and varied tests on beams.

1953 543 pages illus. $12.00

Write for copy on 10-day approval

JOHN WILEY & SONS, Inc.

440 Fourth Ave. New York 16, N. Y.

Voss retires from MIT staff

Prof. Walter C. Voss, head of the Department of Building Engineering and Construction at the Massachusetts Institute of Technology, retired last summer after long service. Professor Voss, an ACI member since 1917 and a "Quarter-Century Member-Getter," has the distinction of being one of the early pioneers of the American Concrete Institute.

Professor Voss, born in Chicago, Ill., in 1887, graduated from Teachers College in 1907, the University of Illinois in 1912, and MIT (Master of Science) in 1932. After two years work in structural design in Chicago, he became head of the Department of Architectural Construction at Wentworth Institute in Boston in 1914; from 1925 until he came to MIT, Professor Voss served as district structural engineer with the Portland Cement Assn. He is widely known as a consultant in architectural construction and materials, director of the California Stucco Products Co., member of the committee on masonry of the American Standards Assn., chairman of the administrative committee on research of the American Society for Testing Materials, and chairman of the committee on building codes of the American Institute of Architects.

New president for the Japan Society of Civil Engineers

Dr. Kikumatsu Hirai has been named president of the Japan Society of Civil Engineers, succeeding Mr. Shikazo Inaura who has retired.

James S. Whitney

James S. Whitney, 31-year-old associate partner in the consulting engineering firm of Ammann and Whitney, New York City and Milwaukee, was drowned last March while swimming at Nassau, the Bahamas.

Mr. Whitney was a resident of Milwaukee, Wis., and Oyster Bay, L. I. He was born in Milwaukee, was graduated from Cornell University as a civil engineer in 1943 and served in the South Pacific as a Navy Lieutenant aboard destroyers in World War II. He was an associate member of the American Society of Civil Engineers and a member of the New York State Society of Professional Engineers and Sigma Alpha Epsilon fraternity.

Why you get BETTER CONCRETE with DAREX AEA...

Always specify DAREX AEA to get the full benefits of air entrained concrete:

- *Places easier*
- *Finishes faster and better*
- *Has finer surface texture*
- *More durable when exposed to freezing and thawing, seawater or sulphate attack*

It is not a by-product resin . . . it is scientifically compounded to give you controlled air!

Unlike air entraining agents made from by-product resins, DAREX AEA is always uniform and makes it easy to get the right amount of air for the job. It is specifically formulated to prevent entrainment of excessive quantities of air in your concrete.

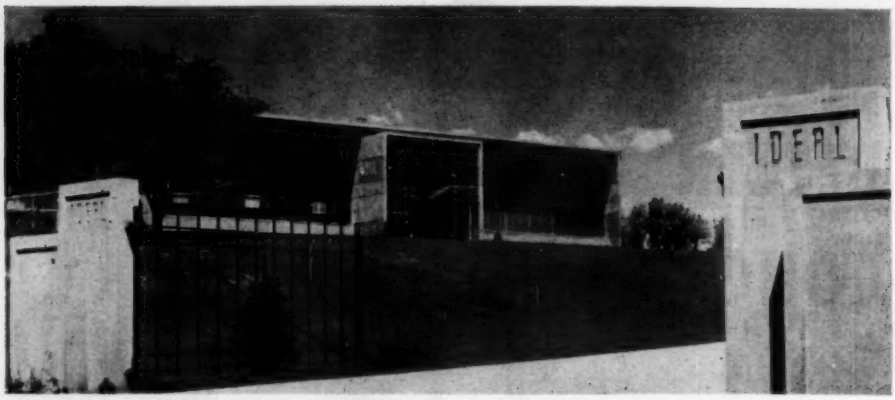
No other air entraining agent — *no, none* — offers you the same assurance of finer quality concrete. No other contains a catalyzing agent to increase the strength of air entrained concrete.

The *on-the-job* performance of DAREX AEA is under constant scrutiny in Dewey and Almy's cement and concrete laboratory — one of the most completely equipped in the country.

CONSTRUCTION SPECIALTIES DIVISION

DEWEY and ALMY Chemical Company

Cambridge 40, Mass. • Chicago 38 • San Leandro, Calif.
Montreal 32



Ideal's new research center at Boettcher, Colo.

Ideal Cement builds new research center

With the dedication on Aug. 19 of a new laboratory and research center at Boettcher, Colo., Ideal Cement Co. embarked upon an expanded program of scientific research into the production and use of portland cement.

The new laboratory, built at a cost of nearly half a million dollars, has as its primary and guiding objective "the making of better products and the broadening of their usefulness," according to Cris Dobbins, president of the company. In following out this objective, research will extend not only into production of cement, but also into specialized end uses of cement, and into related fields such as the production of lightweight concrete aggregates and other products. Ideal's extensive research program has been developed on the basis of a survey of the company's research needs. Included in these projects is work in the fields of raw materials analysis, quality control of cement production, development of new products, and the testing of finished products in situations of actual use.

For research projects, Ideal scientists will have at their disposal modern research equipment. Included is a complete pilot plant containing everything from miniature kilns of two different sizes to complete raw materials processing and grinding equipment. Facilities are housed in special service buildings adjoining the main, air-conditioned research building. Using them, it is possible to duplicate the cement production situation which exists in any plant. In addition, experimental work can be done in all phases of cement production under conditions which can be completely controlled.

The main laboratory units are housed in a two-story, architectural concrete unit containing 8300 sq ft of floor space. This unit has a complete physical testing laboratory, chemical laboratory, petrographic laboratory, and specialized equipment for the analysis and study of materials going into the manufacture of cement, lightweight aggregates, and of concrete itself. In addition to the laboratory and testing facilities, the building also contains a complete machine shop, drafting room, library, and office facilities for the scientific staff.

ASTM accepts 63 new materials specifications

Thirty-four sessions and many subcommittee meetings were held at the 56th annual meeting of the American Society for Testing Materials in Atlantic City last June 28 to July 3.

Among the sessions of interest to JOURNAL readers were those on significance of tests of concrete; lateral pile load tests; and concrete, which dealt with grading of sand in mortars, thermal tests on aggregate, and non-destructive testing of concrete.

R. B. Young, a past president of ACI, was honored with ASTM's Award of Merit for outstanding service, particularly in technical committee work.

At the 1953 annual meeting, 72 of the society's technical committees reported, with

the result that 63 new specifications and tests were approved. Among the tests and specifications reported by committees of interest to JOURNAL readers were the following:

Cement—Method of Mechanical Mixing of Hydraulic-Cement Mortars of Plastic Consistency (C 305-53 T).

Chemical-Resistant Mortars—Method of Test for Compressive Strength of Resin Type Chemical-Resistant Mortars (C 306-53 T); Method of Test for Tensile Strength of Resin Type Chemical-Resistant Mortars (C 307-53 T); Method of Test for Working and Setting Times of Resin Type Chemical-Resistant Mortars (C 308-53 T).

Concrete and Concrete Aggregates—Specifications for Liquid Membrane-Forming Compounds for Curing Concrete (C 309-53 T); Method of Test for Resistance of Concrete Specimens to Slow Freezing in Air and Thawing in Water (C 310-53 T); Method of Testing Fly Ash as an Admixture for Portland Cement Concrete (C 311-53 T).

Pipe association holds short course

The American Concrete Pipe Assn. held its third annual short course school of instruction Sept. 10-12 at the Sherman Hotel, Chicago, Ill., under the direction of John G. Hendrickson, Jr., research engineer of the American Concrete Pipe Assn.

Engineers from the Portland Cement Assn. and the National Sand and Gravel Assn. participated as teachers alongside industry representatives. Subjects on the agenda included: design of nonplastic concrete mixes; pozzolans, wetting agents, air-entraining agents, calcium chloride and Hydropel as admixtures; aggregate characteristics and their influence on concrete; influence of curing procedures on concrete; methods of vibrating mixes and their advantages; joints for minimum infiltration, and manufacture and maintenance in a concrete pipe plant.

Group participation was encouraged by the use of three panels during the three-day meeting. An all-industry panel discussed manufacturing problems during the final day.

Building design and construction course

Under the direction of architect Howard T. Fisher, Lake Forest College, Lake Forest, Ill., conducted summer school on "Integrated Building Design and Construction." The course demonstrated the three-dimensional teaching method Mr. Fisher used at the Pan American Union at Bogota, Columbia, last year and at McGill University in Montreal early this year.

Methods employed taught architecture and construction techniques simultaneously in terms of full-scale materials and structures. Students worked on problems involving single family residences, row housing developments, store front designs, elementary schools, and college dormitories. The first mock-ups were cross sections, and later the group progressed to full-height partial structures, such as the corner of a house or school building, or a complete store front.

Errata

The following corrections should be made in the paper "Analysis of Continuous Circular Curved Beams," ACI JOURNAL, Nov. 1950 *Proc.* V. 47.

p. 227—the 17th line should read "For span 1-2 (0.536) (66.2) = 35.48"

p. 227—the 26th line should read "For span 3-4 (0.536) (−76.00) = −40.70"

Advertisement

If you are doing, or about to do, PRECAST CONCRETE CONSTRUCTION

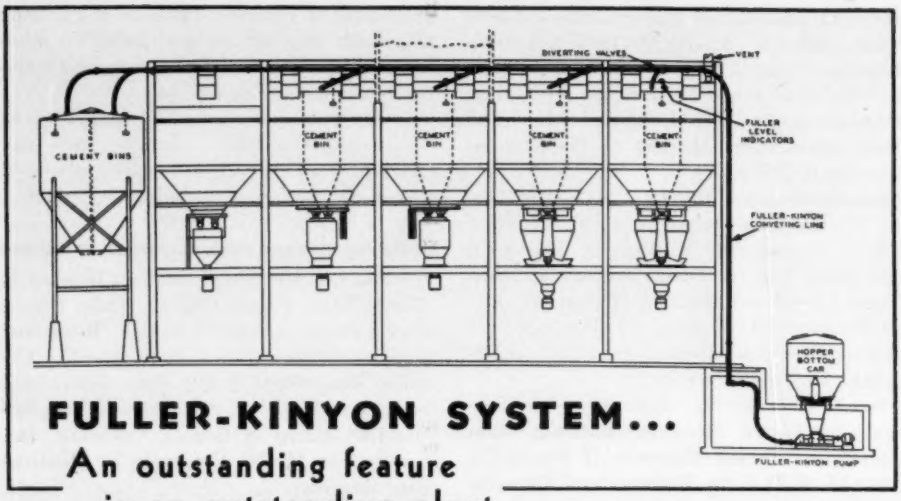
You will want our new Manual just completed.....It will save you money and trouble. Use this coupon to order your Manual. Single Copies $25.00. Quantities of 10 or more $12.50.

F. THOMAS COLLINS & ASSOCIATES, Consulting Engineers
P. O. Box 208, San Gabriel, California

Gentlemen:
Please send me your **Manual of Precast Concrete Construction.** My check is enclosed in the amount of $_____. (or) Please send Manual C. O. D. _____

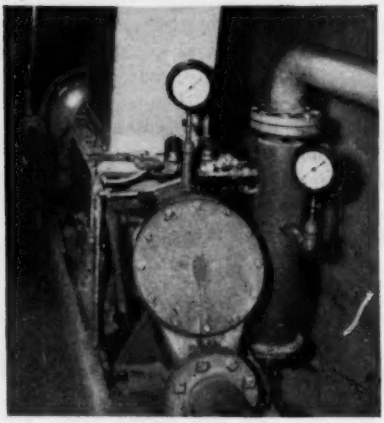
Name_____ Company_____

Street_____ City_____ State_____



FULLER-KINYON SYSTEM...

An outstanding feature in an outstanding plant

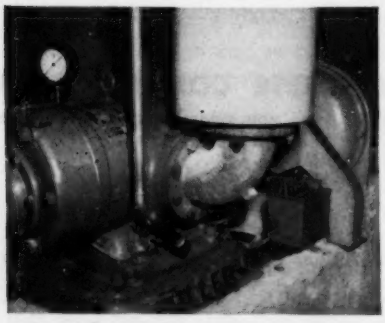


Fuller-Kinyon Pump in pit underneath tracks.

One of the ready-mixed concrete plants put into operation during 1950, Iron City Sand and Gravel Company, Pittsburgh, Penna. uses a Fuller-Kinyon System for handling bulk cement. It is said the storage and conveying system is one of the important features of this plant.

Cement, received by rail or truck, is discharged to a Fuller-Kinyon Pump, which conveys to one storage bin of 800 barrel capacity of two compartments, and four 200 barrel compartments built into the center of each of the four-compartment aggregate bins.

The system delivers to all bins through diverting valves in the conveying line, which are operated from a walkway above the bins. Automatic bin controls sound an alarm and shut down the pump whenever a bin is full. The operator can start and stop the pump from a central control panelboard.



Fuller Rotary Compressor which furnishes air for conveying—capacity 482 c.f.m., 20-lb. pressure.

A Fuller-Kinyon System may be readily installed without interrupting production or interfering with existing structures or equipment. Why not have us survey your conveying systems and make a recommendation for the betterment of your operations. There's no obligation, of course.

FULLER COMPANY, Catasauqua, Pennsylvania
Chicago 3—120 So. LaSalle St.
San Francisco 4—420 Chancery Bldg.

Fuller P-132

Who's Who This Month

Committee 711

Under the chairmanship of Prof. F. N. Menefee, Committee 711, Precast Floor Systems for Houses, presented the revised "Minimum Standard Requirements for Precast Concrete Floor Units (ACI 711-53)" to the Institute at the 1953 ACI convention in Boston. The revised standard, p. 1, was ratified by letter ballot by the Institute membership on May 29, 1953.

The revision changed the 1946 Standard by adding descriptions of assembled concrete block, precast inverted T-beam joists with precast filler block, and inverted precast slab and T-joist types of floor units. New information was incorporated on moment bar spacing, steel requirements, distance between lateral supports, and provision for tests.

Committee 711, responsible for these revisions, is comprised of the following members: F. N. Menefee, chairman; Leo M. Legatski, secretary; Ralph W. Adams, Fred C. Bamman, Warren A. Coolidge, R. E. Copeland, Glenn Murphy, S. J. Chamberlin, Laurence G. Farrant, Harold B. Hemb, C. F. Moore, O. Neil Olson, Gayle B. Price, J. W. Warren and C. A. Willson.

Edwin J. Callan

"Concrete for Radiation Shielding," p. 17, is presented by Edwin J. Callan, Captain, USAF, Wright-Patterson Air Force Base, Ohio.

Before recall to active duty Captain Callan was chief, Thermal Research and Field Durability Section, Concrete Research Division, Waterways Experiment Station, Vicksburg, Miss., where he was engaged in studies of thermal and elastic properties of concretes and components, dynamic testing, weathering tests at both the laboratory and field exposure stations in Maine and Florida, and statistical analyses.

Following graduation from Manhattan College in 1943, he was immediately called to active duty with the Chemical Warfare Service, U. S. Army, and served in the United States and in the Mediterranean and European theaters. After release he accepted a position as physicist with the Central Concrete Laboratory, Mt. Vernon, N. Y., and was transferred to the Concrete Research Division, Waterways Experiment Station, Jackson, Miss., in 1946.

Captain Callan has also taken additional courses in mathematics from the University of Chicago and military radiological and electronics courses. He is a member of the American Physical Society, American Chemical Society, American Geophysical Union, and Society of American Military Engineers.

Bruce E. Foster

Bruce E. Foster, author of "Absorption by Concrete of X-Rays and Gamma Rays," p. 45, is a materials engineer, Concreting Materials Section, National Bureau of Standards, Washington, D. C.

He has been with the Bureau since 1935, most of which time was spent in the California acceptance testing laboratories. He was associated with the testing of pozzolan cement for Bonneville Dam and was in charge of the Permanente branch laboratory which tested the cement for Shasta Dam and for most of the war-period construction in the Pacific area.

A graduate of Colorado College, University of Oregon, and Stanford University, Dr. Foster has served as graduate assistant at Oregon and Stanford and as teaching specialist in physics at Stanford.

He has been an ACI member since 1948 and is a member of ACI Committees 212, Admixtures, and 609, Compaction of Concrete by Mechanical Means.

George W. Washa and Paul G. Fluck

"Effect of Sustained Overload on the Strength and Plastic Flow of Reinforced Concrete Beams," p. 65, was collaborated on by George W. Washa and Paul G. Fluck.

Professor Washa, associate professor of mechanics, University of Wisconsin, Madison, is the author of numerous ACI papers. He received the Wason Medal for noteworthy research for work reported in his 1940 paper, "Comparison of the Physical and

Mechanical Properties of Hand-Rodded and Vibrated Concrete Made with Different Cements."

He was a member of the ACI Board of Direction, 1948-50, and is now chairman of Committee 213, Properties of Lightweight Aggregate Concrete; secretary of Committee 115, Research; and a member of Committee 609, Compaction of Concrete by Mechanical Means.

Professor Washa graduated from the University of Wisconsin in 1930 with a BS in civil engineering; received his PhD from the same university in 1938. He has been actively engaged in research work for a number of years at the university.

Also at the University of Wisconsin, P. G. Fluck is assistant professor of mechanics. He received his BS in civil engineering from the university in 1941, his MS in 1947, and PhD in 1949. He has been on the staff of the Mechanics Department since 1941 except for service in the U. S. Navy and short periods with the Wisconsin Highway Commission Materials Testing Laboratory and the Timber Mechanics Division, U. S. Forest Products Laboratory.

Besides being a member of ACI, Professor Fluck is a registered professional engineer in Wisconsin and a member of Tau Beta Pi, Chi Epsilon, and Sigma Xi.

David P. Billington

"Economical Design of Prestressed Concrete Beams," p. 73, is David P. Billington's first contribution to the JOURNAL.

Mr. Billington, structural engineer, Roberts and Schaefer Co., New York, N. Y., graduated with a BSE degree from Princeton University in 1950. For the academic year, 1950-51, he won a Fulbright Fellowship to the University of Louvain in Belgium to study structural engineering. A major part of his program consisted of traveling throughout Belgium and France to study and observe European developments in reconstruction since World War II, notably the pioneering work being done in reinforced and prestressed concrete.

As a result of this work he was granted a renewal of his fellowship for the following year to work under Prof. Gustave Magnel at the University of Ghent. With Professor Magnel he studied advanced structures and reinforced and prestressed concrete design. Much of his time was spent on research in reinforced and especially prestressed concrete in Professor Magnel's laboratory.

One project which Mr. Billington directed was a study of looped wire anchorage for prestressed concrete members and the subsequent dynamic testing of a prestressed beam so anchored. The results of this investigation were published in *Precontrainte* (Brussels) July-December, 1952.

Houston

Continued from p. 5

Southern Pacific recently announced it will construct a $6,000,000 switching yard to supplement its facilities in Houston. The new yards will occupy 300 acres and will add a capacity for handling 5620 cars.

The industry showing by far the greatest expansion in the Gulf Coast during the past decade is chemicals. An official of Monsanto Chemical Co. summed up the industry as follows: "About 85 percent of the nation's petro-chemical plants are located in the crescent shaped area from Baton Rouge, La., to the southern tip of Texas. . . . Some 90 percent of the nation's styrene monomer and butadiene used in the manufacture of synthetic rubber is produced in the area."

Highlights in Houston's industrial development include Ethyl Corp.'s $45,000,000 plant to make anti-knock compounds opened in 1952, and the Heyden Chemical Corp.'s announcement of a future $12,000,000 plant. Phillips Chemical Corp. is in the midst of a plant expansion program of some $40,000,000 and Diamond Alkali Co., which opened its $12,000,000 Houston plant in 1948, already is expanding at a cost of more than $7,500,000. Shell Oil and Shell Chemical, Humble Oil and Refining Co., and many others have announced expansion plans for their Ship Channel plants.

Some 20 chemical plants in the immediate Houston area report a total capital investment of $250,000,000 and expansion by 1954 amounting to another $90,000,000.

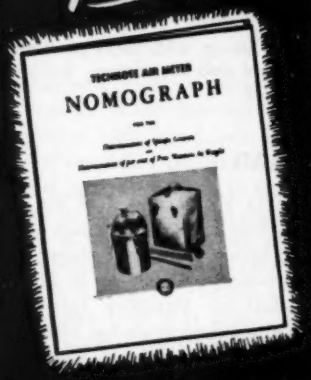
And the end is not in sight. Research is uncovering new uses, new products, and new production methods. Discoveries of new petroleum reserves each year exceed that which is taken from the earth.

Houston is emerging in the process as a true frontier of industry.

NOW TECHKOTE White Air Meter

...The proven standard in Air Meters offers you this great new

plus



Designed for:

- COMPLETE ACCURACY
- EASY READING
- COMPLETE RANGE

Techkote Air Meter NOMOGRAPH

This new Nomograph when used with the Techkote Air Meter provides a quick and easy means of determining the Specific Gravity and per cent of Free Moisture of Aggregates as used in the testing and designing of concrete mixes.

Every detail for speed and simplicity of computation has been incorporated into its arrangement.

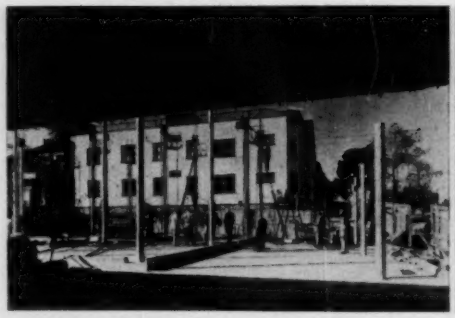
It is scientifically designed and free of error. In addition, it is protected with a water and acid-proof coating for durability in field and laboratory use. The graph (divided into three sections) covers a range of 1.60 to 6.60 which exceeds the Specific Gravity limits of aggregate as used in the construction industry. Also, the graph covers a range of zero per cent to ten per cent for the determination of free moisture by weight and can be projected to thirteen per cent.

This outstanding new Nomograph together with the Techkote White Air Meter offers a combination unequaled in the field in this type of equipment. ***TO BE SURE...USE THE FINEST!***

TECHKOTE COMPANY

INCORPORATED

820 WEST MANCHESTER AVENUE, INGLEWOOD 1, CALIFORNIA



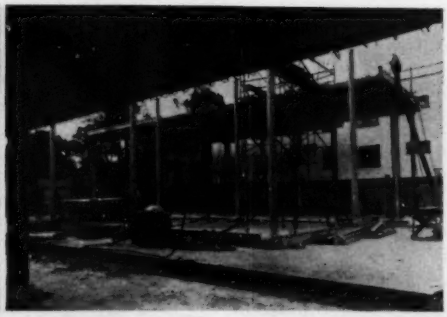


Fig. 1 (left)—Office building roof slab on ground ready for lifting, with jacks positioned atop columns. Note control panel at left center. Fig. 2 (right)—Roof slab in position. Lifting process was completed in less than 5 hr

Lift-slab construction

Completion of several new buildings on the West Coast has again focused attention on the Youtz-Slick lift-slab technique of construction. Among those recent projects using the method to advantage are the Cass and Johansing office building and Temple Isaiah in Los Angeles, and the American Potash and Chemical Corp. research laboratory in Whittier, Calif.

The lift-slab method of casting a concrete roof slab at ground level and lifting it into position by means of powerful 50-ton capacity hydraulic jacks on steel columns is graphically illustrated in Fig. 1 and 2 of the Cass and Johansing building. The details of key-hole shear and lifting collars are shown in Fig. 3.

The two-story, 17,000-sq ft lift job was accomplished by Vagtborg Lift-Slab Corp. who had the subcontract for lifting. Albert C. Martin and Associates were architects and engineers; J. A. McNeil Co. were general contractors.

Lifting tilted roof

One of the more unusual jobs to date was Vagtborg's lifting of the roof for the new Temple Isaiah (Fig. 4 and 5). The irregular

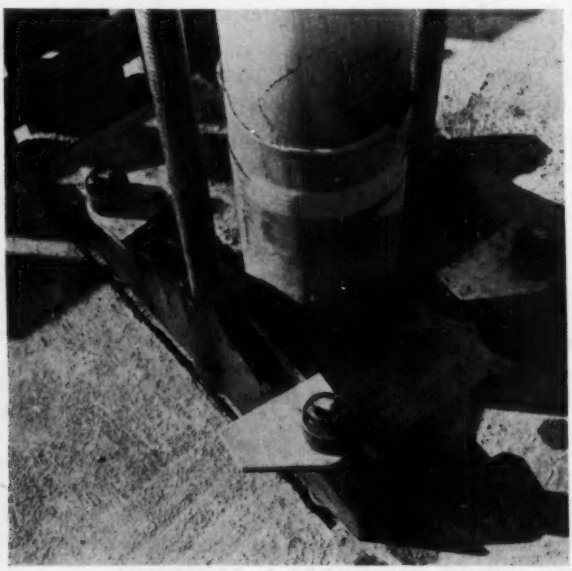


Fig. 3—Close-up of details of key-hole shear and lifting collars used in lift-slab process

pie-shaped roof weighed almost 1,000,000 lb and covered approximately 7000 sq ft. Its final position was such that one side was tilted 4 ft higher than the other side.

Application of the lift-slab technique is said to have saved $44,000 over what it would have cost to build the structure by conventional methods and reduced construction time by 25 percent.

A 12-column lift was employed for the odd-shaped roof which followed the pattern of the floor slab. The roof is 50 ft wide at the narrow end with a maximum chord length of 132 ft.

Using standard 3000-psi concrete, the roof was cast directly on the floor slab. The floor slab was coated with liquid wax followed by a coating of non-silica parting sand, similar to that used in steel castings to separate the molds, prior to casting the roof slab.

The slab is supported on six moderately heavy reinforced concrete upturned beams, each about 76 ft long, 1½ ft wide, and having a maximum depth of 4 ft 2 in. The steel collars that hooked onto the lifting mechanism were embedded in the beams. The slab itself varies from 4 to 7 in., depending on the distance between supporting beams.

Lifting was accomplished by 50-ton capacity hydraulic jacks set atop the 12 columns. These jacks raised threaded rods fastened to collars around the columns. To permit tilting of the slab, the collars had to be specially designed.

The jacks were operated singly from a central control panel, so that actually the top slab was peeled away from the floor slab instead of a direct lift. After the roof slab was lifted clear of the floor about 2 ft it was tilted and the rods readjusted. From then on it was a straight lift except for changing column braces and guys as the slab progressed upward.

When in position, the slab was supported on ¾-in. plates bolted to column flanges. Columns were then encased in concrete fireproofing and the collars grouted in.

Architect for the project was Kenneth N. Lind; structural design by Brandow and Johnston; contractor was Zimmer Construction Co.

Combining with tilt-up construction

Lift-slab and tilt-up techniques were combined in the erection of the one-story, 10,200-sq ft laboratory for American Potash and Chemical Corp. After the roof slab was lifted into place, the walls were tilted into position. Fork lift trucks were used to raise interior walls. It took only 14 hr to install 33 panels.

The building was erected in 38 working hours at a cost of $6 per sq ft, exclusive of interior work. The laboratory was designed and built by the Austin Co.; Vagtborg Lift-Slab Corp. was subcontractor.

Design of lift-slabs

According to the Institute of Inventive Research, San Antonio, Texas, which con-

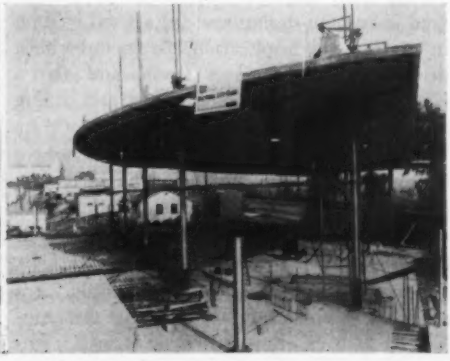
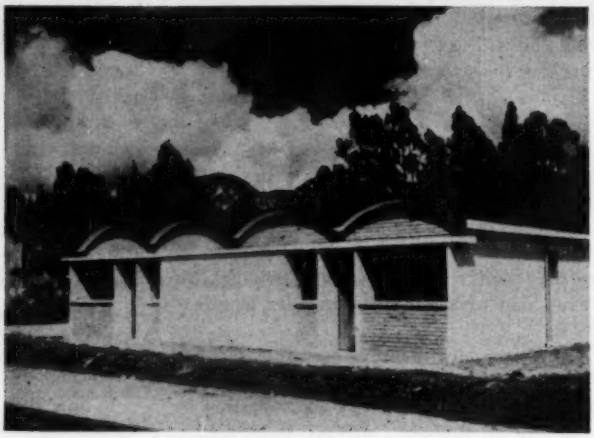


Fig. 4 (left)—Heavily reinforced concrete slab for roof of Temple Isaiah after forms were removed preparatory to lifting into position. Note supporting beams on top. Hydraulic jacks are not yet in position at top of columns. Fig. 5 (right)—A million pounds literally floating in air. Lifting was accomplished by 50-ton capacity hydraulic jacks set atop the 12 columns supporting the pie-shaped concrete slab. These jacks raised threaded rods fastened to collars around the columns. When in position, the slab was supported on ¾-in. plates bolted to column flanges

LOW COST INDUSTRIAL HOUSING

Bogota, Colombia

Thin shell arch roofs and side walls precast —



The Vacuum Way

VACUUM CONCRETE, INC.

4210 Sansom Street - - PHILADELPHIA, PA.

Phone BAring 2-4545

trols all licensing operations of the Youtz-Slick methods, the design of lift-slab structures follows the general outline below.

"(1) Layout floor plans, locating columns in a rectangular grid as much as possible.

"(2) Design slabs according to ACI Building Code as a flat slab panel.

"(3) Two major conditions to be considered in column design are: (a) a fixed column in static load application, to include both dead and superimposed loads, and (b) a column used as a lifting support and acting as a vertical cantilevered beam.

"(4) The collar embedded in the slab where openings for columns occur is designed as a direct shear connector and the collar plate must be considered as a flat plate which is not subject to deflection.

"(5) In designing an isolated footing for a column, the column and footing are considered as a cantilevered retained wall. Imposed wind loads are added if the column is to be used for partial support in wind bracing.

"(6) Lift-slabs are not static during lifting operations and therefore must be in a deflected position the instant they become free of the slab upon which they were cast. After a slab is fastened in position, the deflection will take a final set which is somewhat less than the deflection during lifting. In a lifting position, the slab is exactly as assumed in the analogy of a beam or column by moment distribution."

International engineering congress

The Federation Internationale des Associations Nationales d'Ingenieurs will hold the First International Engineers' Congress in Rome, Oct. 8-11. General subject of the meeting will be the preparation of the engineer for his place in society. Any person interested in attending the congress can receive further information from the Italian Executive Board for the Organization, c/o A.N.I.A.I., Rome 90, Via Terme Diocleziano.

International low-cost housing exhibit

The Government of India, Ministry of Works, Housing, and Supply is sponsoring an international exhibition of low-cost housing in New Delhi, from Jan. 20 to Mar. 5, 1954.

New Members

The Board of Direction approved 107 Individual, 7 Corporation, 42 Junior, and 19 Student applications for ACI membership during May, June, and July. With adjustments for losses due to resignations, deaths, and members dropped for non-payment of dues, the total membership was 6144 on August 1.

Individual

ADAMS, E. N., Worcester, Mass. (Consulting Engineer)
AGAR, GEORGE W. A., Windsor, Canada (Pres. Anza Products, Ltd.)
AHRENS, GEORGE M., San Francisco, Calif. (Engineer, Sverdrup and Parcel, Inc.)
AKI, TEVFIK, Nallihan, Baraji, Turkey (Civil & Constr. Eng.)
ALVARADO, MANUEL A., Panama, Panama (Civil Eng., Univ. of Panama)
ARAKI, KEN-ICHI, Tokuchima Prefecture, Japan (Asst. Prof., Faculty of Engrg., Tokushima University)
ATLAS, WILLIAM, Flushing, N. Y. (Struct. Eng., General Engineering Assocs.)
AUFIERO, EUGENE J., Pittsburgh, Pa. (Struct. Design, Peth & Reed)
BALIGH, DR. ALY, Cairo, Egypt (Eng., Design, Supv., Ministry of Public Works)
BARNES, GILBERT C., Milwaukee, Wis. (Bldg. Plans Engr., Wis. Tel. Co.)
BARNES, JACK Y., Helena, Montana (Dist. Engr. Portland Cement Assn.)
BARNES, THEODORE A., Hannawa Falls, N. Y. (Ass't Res. Eng., Brown & Blauvelt)
BARRETT, GEO. DICKEY, Atlanta, Georgia (Arch. & Struct. Engr.)
BATRA, J. D., Calcutta, India (Cons. Engr., W. W. Wood, Sons & Partners)
BENNETT, JOHN A. C. S., Sanderstead, Surrey, England (Struct. Engr. and Tech. Advisor)
BIGGS, DUTTON, Kansas City, Mo. (Struct. Engr., Design, Portland Cement Assn.)
BIRD, KENNETH FRED, Johannesburg, South Africa (Chf. Engr., Twisteel Reinforcement & Designs Pty, Ltd.)
BROWN, MARTIN R., JR., Brooklyn, N. Y. (Struct. Designer, Corbett, Tinghir and Co., Inc.)
CALLAHAN, RICHARD W., San Diego, Calif. (Partner, Callahan Bros.)
CAMPBELL, CHARLES C., Kansas City, Mo. (Engr. and Field Super., Marshall & Brown)
CASTLER, JOSEPH H., Los Angeles, Calif. (Struct. Eng., State of Calif.)
CASTOR, N. RICHARD, Sheridan, Pa. (Struct. Frameworks)
CHAMECKI, SAMUEL, State of Parana, Brazil (Prof. Struct. Engr'g., Univ. of Parana)
CHANDLER, JAMES L., Chicago, Ill. (Struct. Engr., Roberts and Schaefer Co.)
CHANG, WEN-TAO, Washington, D. C. (Sr. Highway Engr., Bridge Constr., Taiwan Highway Bureau, Taiwan, Formosa)
CHEN, KAO-LING, New York, N. Y. (Struct. Designer, Hardesty & Hanover)
CHICHA, GEORGE, Spokane, Wash. (General Contractor)
CLARK, BRUCE E., Sacramento, Calif. (Geologist, Corps of Engrs., U. S. Army)
CLARK, JOSEPH D., New York, N. Y. (Constr. Engr., U. S. Army)
CLARK, WARREN W., Salem, Oregon (Partner, Clark & Groff, Engineers)
COOLEY, RAYMOND H., Sacramento, Calif. (Spec. Repres. State & Gov't Agencies, PCA)
CREAMER, G., DR. CLAUDIO, Caracas, Venezuela (Civil Engr., Oficina Don Hatch)
CROMIS, RALPH E., Pontiac, Mich. (Pres. and Gen. Mgr., Boice Builders Supply)
DENN, MARTIN MICHAEL, Manhattan Beach, Calif. (Constr. Engr., Ford J. Twaits Co.)
DODOLAN, JOHN S., Jackson Heights, L. I., N. Y. (Struct. Engr., M. W. Kellogg Co.)
ELLIS, GENE E., Topeka, Kans. (Struct. Engr., PCA)
ERWIN, ROBERT G., Hialeah, Florida (Constr. Insp., Wingertoer Labs., Inc.)
FALLAT, ANDREW G., Allentown, Pa. (Service Engr., Lehigh Portland Cement Co.)
FRANKLIN, ROBERT H., St. Louis, Mo. (Field Constr. Engr., Phillips Petroleum Co.)
FROWD, JOHN R., Yallourn, Vic., Australia (Tech., Asst., Concrete Prod. & Testing, State Electricity Comm. of Victoria)
GREEN, LLOYD F., Pittsburgh, Pa. (Distribution Mgr., Dravo Corp.)
GONZALEZ Z., GUILLERMO, Bogota, Colombia (C. E.)
GUERRA, GUIDO, Napoli, Italy (Prof. Civil Engrg. Univ. of Naples)
HALLE, FERNAND, St. Hyacinthe, Canada (Agent for Building Supplies and Equipment)
HAMMERSMITH, GEORGE F., Elmhurst, Ill. (Mgr., Concrete Prod. Div., Elmhurst-Chicago Stone Co.)
HENDRICH, JOHN M., Buffalo 12, N. Y. (Pres. Hendrich Construction, Inc.)
HOLMES, ARCHIBALD R., Woodstock, Canada (Outside Supv., Inspect., Bell Telephone Co. of Canada, Toronto)
HOSKIN, DOUGLAS GEORGE, Woodstock, Canada (Development Engr., Shell Industries, Ltd.)
INOCENCIO, JOSE, Manila, Philippines (Struct. Engr., Armed Forces of the Philippines)
JAFFE, MAX, Middletown, Ohio (Designer, McGrow Constrn. Co.)
JASON, MATHEW FREDERICK, Beterverwagting Village, East Coast, Demerara, British Guiana (Super., Public Works Dept. Br. Guiana)
JENSEN, GILBERT L., Des Moines, Iowa (Concrete Technician, J. C. White Concrete Co.)
JOSHI, KESHOV MORESHWER, Lashkar (Gwalior) India (Asst. Engr., Municipality)
KELLBERG, F. W., San Francisco, Calif. (Struct. Eng., Building Construction)
KLEIN, ARTHUR A., Chester, Pa. (Hd., Struct. Sect., Phila., Distr., Corps. of Engrs., U. S. Army, Phila. Pa.)
LE COMPTE, OLIVER P., Colorado Springs, Colo. (Partner, Transit Mix Concrete Co.)
LONG, FREDERICK W., San Francisco, Calif. (Lab. Test. and Field Insp., Pacific Gas & Electric Co.)
LOPEZ B., GERMAN, Ambato, Ecuador (Struct. Engr. & Supv. of Constr., Mfr. of Concrete Blocks)
MATHEU, ROBERT R., San Francisco, Calif. (Struct. Engr.)
MATSUMOTO, KIYOSHI, Osaka, Japan (Chf. Engr. of Design, Nikken Sekkei Komu Co.)
MCKIE, ALAN, Birmingham, England (Struct. Engr., Public Works Dept., Birmingham Corporation)
MCKINLEY, RICHARD, Greeley, Colo. (General Counsel)
MERCADO, AUGUSTO F., Manila, Philippines (Asst. Prof., Struct. Design, National Univ.)
MERLO, LOUIS, JR., Windsor, Canada (Mgr. Bldrs. Supplies, Sterling Constr. Co., Ltd.)
MILLER, FRANK W., Detroit, Mich. (Senior Struct. Engr., Detroit Steel Products Co.)
MONTROSE, KARL D., Denver, Colo. (Chemist, Denver & Rio Grande Western R.R.)
MORAN, J. DURKIN, Long Beach, Calif. (Arch. Washington Dist. C/E)
NELSON, CLAUDE MAYNARD, Toronto, Canada (Struct. Engr., Canadian National Rlwys.)
NICHOLS, GRAYDON E., Sacramento, Calif. (Foundation Engr., O. J. Porter Co.)
NISBET, WILLIAM D., Denver, Colo. (Struct. Engr., T. H. Buell & Co.)
OGASAWARA, JIRO, Hokkaido, Japan (Managing Director, The Hokkaido Hume Pipe Mfg. Co., Ltd.)
PACHECO M., RAFAEL, Leon Gto., Mexico (Chf. Chemist, Cementos Portland Del Bajios, S. A.)
PANKHURST, EDWARD S., La Canada, Calif. (Struct. Engr.)
PARKER, JAMES A., Tulsa, Okla. (Constr. Engr. & Asst. Supt. of Constr., Dresser Engrg. Co.)

PAUL, ELLIS E., New York, N. Y. (Partner, Howard, Needles, Tammen & Bergendoff)
PAULSON, HAAKON, Alpena, Mich. (Distribution Mgr., Besser Manufacturing Co.)
PENA V., CHARLES, Santiago, Chile (Struct. Engr., Ministry of Public Works, Chile)
PIERSON, DON C., Humboldt, Iowa (Pres. & Manager, Concrete Products Corp.)
QUINTANA G., PABLO EMILIO, Bogota, Colombia (Ingeniero Civil)
RAINEY, JAMES E., Detroit, Mich. (Head of Physical Testing Group, Detroit Testing Lab., Inc.)
RAMASWAMY, S., Bangalore, India (Regional Engr., The Concrete Assn. of India)
REVANGSAENG, S. V., Bangkok, Thailand (Civil Engr., Bangkok Municipality)
RICE, E. F., Colege, Alaska (Engineering Teaching, Univ. of Alaska)
RICE, PERCIVAL S., Wellesley, Mass. (Assoc. Prof. Civil Engrg., Tufts College)
RIZZI, ANTHONY V., New York, N. Y. (Assoc. Prof., Civil Engrg., City College Sch. of Tech., Chf. Engr., Rizzi Constr. Co.)
RUBEY, FLOYD G., Dubuque, Iowa (Manager, Dubuque Ready Mix Concrete Co.)
RUTHERFORD, K. S., Freeport, Texas (Engineering Mgr., The Dow Chemical Co.)
SCHAFFNER, CHARLES E., Brooklyn, N. Y. (Assoc. Prof. of Civil Engrg., Polytechnic Institute of Brooklyn)
SCHALLER, J. S., Amarillo, Texas (Concrete Engr., Crowe-Gulde Cement Co.)
SCHANTZ, C. P., Philadelphia, Pa. (Asst. to Chg. Engr., Penna. Railroad)
SCHRIEVER, WILLIAM R., Ottawa, Canada (Asst. Res. Officer, Hd. of Bldg. Design Sect., National Research Council)
SERBY, DAVID K., Mt. Vernon, N. Y. (Struct. Engr., Fraioli, Blum & Yesselman)
SPERRY, H. C., Pittsburgh, Pa. (Staff Engr., Aluminum Company of America)
STANFIELD, ROGER L., Des Moines, Iowa (Engr.-Estimator, Bill Curphy Co.)
STINGLEY, W. M., Topeka, Kansas (Concrete Engr., State Highway Comm. of Kansas)
STROHECKER, HENRY O., JR., Charlotte, N. C. (Pres., Carolina Concrete Pipe Co., Inc.)
SUSSMAN, IRVING AARON, Brooklyn, N. Y. (Struct. Engr., Corbett, Tinghir & Co.)
SZIDON, VICTOR H., Superior, Neb. (Chf. Chem., Ideal Cement Co.)
THEILL, KAJ, San Francisco, Calif. (Struct. Engr.)
THIGPEN, KENNETH A., Birmingham, Ala. (Consulting & Struct. Engr.)
TITLEY, WM., Ashford, Middlesex, England (Works Mgr., Wates, Ltd.)
VAN LAETHEM, MARCEL A. V. A., Louvain, Belgium (Struct. Engr. Consultant)
WASHINGTON, GEORGE, San Francisco, Calif. (Struct. Engr.)
WIEBE, HENRY J., Wichita, Kans. (Owner, Henry J. Wiebe & Co.)
WORK, J. BIRNEY, Chicago, Ill. (Engr., Swift & Co.)
YOSHIMOTO, AKIRA, Sendai City, Japan (Asst. Prof., Dept. of Civil Engrg., Tohoku Univ.)
ZAREMBA, HARRY, East Cleveland, Ohio (Sr. Struct. Designer, H. K. Ferguson Co.)

Corporation

CHIEF OF THE PRINTING & STATIONERY BRANCH, AHQ., Ottawa, Canada (Lt. Col. E. Churchill)
CONCRETE MATERIALS, INC., Charlotte, N. C. (Mr. Peter J. Verna, Jr., V. P.)
GIFFELS & VALLET, INC., Detroit, Mich. (Frank Sharrow)
KAISER ENGINEERS, Engineering Library, 1924 Broadway, Oakland 12, Calif. (Mr. George Schumann)
K. C. CONSTRUCTION SUPPLY CO., Denver, Colo. (Joseph L. Boettner)
STOLTE, INC., Oakland, Calif. (Mr. W. A. Giddings)
U. S. NAVY, PUBLIC WORKS CENTER, San Francisco, Calif. (Officer in Charge, Material Division)

Junior

BARENFANGER, LT. (jg) CHARLES W., Shumaker, Ark. (Constr. Supt., Barenfanger Construction Co.)
BJORGUM, MARTIN CLIFFORD, Basin, Wyoming
BOWEN, DONALD E., Pontiac, Mich. (Sales & Service, Master Builders Co.)
BRECKENRIDGE, JOHN C., Aiken, S. C. (C. E. Explosives Dept., Atomic Energy Div., E. I. Dupont Denemours & Co.)
CULP, ROBERT L., Whittier, Calif. (Struct. Designer, Edward S. Parkhurst)
DEL CASTILLO G., LUIS CONRADO, Trujillo City, Dominican Republic
FORBES, ALAN JAMES, Stkilda S2, Victoria, Australia (Engr., State Electricity Commission of Victoria)
HOLDEN, PVT. RAY, Aberdeen Proving Ground, Md. (Asst. C. E., U. S. Army Ordnance)
HORAN, JOHN W., Red Hook, N. Y.
IFFLAND, JEROME S. B., Brooklyn, N. Y. (Struct. Engr., Praeger-Kavanaugh)
ITO. KOICHI, Kyoto, Japan (Asst. of Dept. of C. Engrg., Kyoto, University)
JERONIMUS, JOHN, Toronto, Canada (Struct. Designer, Canadian National Railways)
JOHNSON, WILLIS B., Denver, Colo. (Struct. Engr., International Associates)
KAHN, ALVIN, New York, N. Y. (Designer, Edwards & Hjorth)
KAPTANOGLU, SEVKI, Nallihan-Baraj, Turkey Design & Constr. in C. E., Etibank—Turkey)
KARIOTIS, JOHN CHRIS., Pasadena, Calif. (Struct. Engr.)
KASAMOTO, YUJI, Los Angeles, Calif. (C. E., Div. of Highways, Calif.)
KIRKEMO, Missoula, Montana (Chf. Draftsman, Struct. Engr., Field Supt., H. E. Kirkemo, Archt.)
LAMBUR, OSCAR A., Grimsby, Canada (Supervising Insp., Transmission Line Dept., Hydro-Elec. Power Comm. of Ont.)
LEONI, FRANCESCO CIRO, Roma, Italy (Super., Impresa Icilio Leoni)
LUMBERT, FRANK VINCENT, Frontier, Wyo. (Jr. C. E., Los Angeles County Flood Control)
MALLOWS, DENNIS LINGWOOD, Rondebosch, Cape Province, S. Africa (Reinforced Concr. Design., Consani's Engineering, Ltd.)
MALONE, RICHARD A., Victoria, Texas (Design, Supv., Inspection, J. C. Ault & Robert Rick)
MATSUSAKA, EDWIN N., Honolulu, T. H. (Estimator, United Construction Co.)
MICHAELIDES, CHRISTOS COSTAS, Nicosia, Cyprus, (Civil Engr., Arch.)
MIMAKI, CALVIN HISASHI, Honolulu, Oahu, T. H. (Jr. Engr., City and County of Honolulu, Div. of Sewers)
MONDELLI, GIAMBATTISTA TITA, Milano, Italy (Design, Impresa Mario Mondelli)
O'CALLAGHAN, E. P., Brompton, Adelaide, Australia (Deputy Mgr. & Tech. Officer, Ready Mixed Concrete (S. A.) Pty, Ltd.)
PHELPS, BOYD WM., Michigan City, Ind. (Chf. Struct. Engr., Boyd E. Phelps, Inc.)
POWELL, EDWARD JOHN, Washington, D. C. (Naval Arch., G. P. Lively)
RAU, IRVING B., New Orleans, La. (C. E., R. P. Farnsworth & Co., Inc.)
SATO, HARRY M., San Francisco, Calif. (Jr. C. E., DPW—Div. of Highways, Calif.)
SELVILI, MELIH MEHMET, Ismir, Turkey (Constr. Engr.)
SHEA, LEO GERALD, Oak Park, Ill. (Draftsman, Mississippi Valley Structural Steel Co.)
STAIRS, FORREST H., JR., Richmond, Va. (Highway Bridge Designer, Virginia Dept. of Highways)
SUER, HERBERT S., Cambridge, Mass. (Research Assistant, Dept. of Civil Engrg., MIT)
VOSGANIAN, ZORAB, Brooklyn, N. Y. (Struct. Engr. & Designer, Fraioli, Blum & Yesselman)
WARDLE, TERENCE MICHAEL, Toronto, Canada (Struct. Designer, Canadian National Railways)
WEINACHT, RICHARD J., JR., Closter, N. J.
WEINSTEIN, HARVEY Y., Chicago, Ill. (Engrg. Draftsman, Chicago and Northwestern Railway Co.)
WELDON, HARRY P., Alameda, Calif. (Struct. Engr., Design, W. B. Causen)
YBARRA G., ROBERTO A., Caracas, Venezuela

Student

ALESSANDRI, JOSEPH PETER, Redwood City, Calif.
ALPER, MARSHALL EDWARD, Cambridge, Mass.
DESAI, RAJ THAKORBHAI, Berkeley, Calif.
DE VIDO, ALFRED, Clifton, N. J.
FETTERHOFF, KENNETH I., Pittsburgh, Pa.
GONZALEZ V., ENRIQUE, Lima, Peru
HAZA DEL C., LUIS ORLANDO, Trujillo City, Dominican Republic
HENAO, JORGE, W. Lafayette, Ind.

LIEBSACK, ROBERT E., Laramie, Wyo.
MCALPINE, WILLIAM R., Rochester, N. Y.
MEDUS, LUIS, Bahia Blanca, Argentina
PEROLIO, ANDREW C., JR., Belleville, Ill.
PIERSON, DON C., JR., Humboldt, Iowa
PINA V., JUAN ENRIQUILLO, Trujillo City, Dominican Rep.
SHUMAN, ALVAN E., Mattapan, Mass.
SMITH, DENNIS H., San Marino, Calif.
SMITHIES, ROGER WILLIAM, Madison, Wis.
SOSA B., LUIS SALVADOR, Trujillo City, Dominican Republic
TADROWSKI, FRED RONALD, Chicago, Ill.

Honor Roll

February 1—July 31, 1953

James A. McCarthy is still our top member-getter with a total of 11 credits. J. E. Jellick is second with 8 credits, Walter H. Price third with 5½ credits while Samuel Hobbs and Herbert J. Gilkey share fourth place with 5 credits each..

Why not encourage those who are actively interested in the concrete industry to share their knowledge and in turn benefit from ACI membership.

James A. McCarthy	11
J. E. Jellick	8
Walter H. Price	5½
Samual Hobbs	5
Herbert J. Gilkey	5
Phil M. Ferguson	4½
Elmo C. Higginson	4½
F. Thomas Collins	4
Henry L. Kennedy	4
C. H. Scholer	4
M. A. Sozen	4
J. A. Thomen	4
H. B. Tryhorn	4
Myle J. Holley, Jr.	3
K. A. Howard	3
Arbak Abadalian	2
MacGregor S. Anderson	2
Harold Anson	2
Reinard W. Brandley	2
Carlos D. Bullock	2
W. S. Cottingham	2
J. R. Florey	2
K. Hajnal-Konyi	2
John M. Hayes	2
M. B. Klock	2
Federico Leon	2
W. Larman	2
Adrian Panw	2
George Pinter	2
Leo W. Schmidt	2
E. W. Thorson	2
Fred F. VanAtta	2
C. O. Wailes, Jr.	2
S. J. Warberg	2
George D. Youngclaus	2

PROFESSIONAL CARDS

L. COFF, Consulting Engineer
198 Broadway, New York 7, N. Y.
PRESTRESSED CONCRETE STRUCTURES
Design, Estimates,
Construction Methods, Supervision

JACKSON & MORELAND
ENGINEERS AND CONSULTANTS
Design and Supervision of Construction
Reports — Examinations — Appraisals
Machine Design — Technical Publications
BOSTON NEW YORK

K. AUSTIN JEWELL
Consulting Industrial Hydraulic Engineers
WATER PURIFICATION WORKS — Jewell Process for MINES, MILLS, PLANTS — WASTE TREATMENT WORKS
Transmission, Hydropower, Distribution, Drainage
Plans, Specifications, Reports, Investigations
2125½ Ridge Avenue Evanston, Illinois

The THOMPSON & LICHTNER CO., Inc.
Civil & Industrial Engineers
Design, Supervision, Testing, Development
Special Structures, Airports, Tunnels, Highways, Dams, Concrete Products, Ready Mixed Concrete.
Office & Laboratory Brookline, Mass.

Collins named manager of Zonolite Contractors, Inc.

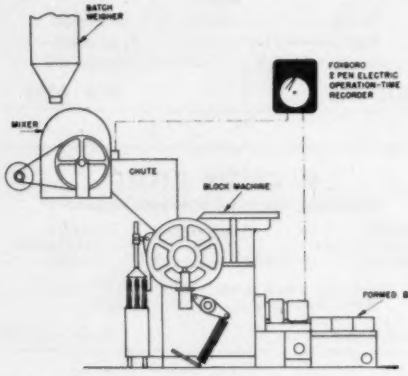
Appointment of W. R. Collins as manager of the newly-formed Zonolite Contractors, Inc., was announced by Andrew T. Kearney, president of Zonolite Co., the parent firm. The contracting firm will make bids and install Z-Crete, a monolithic cast-in-place underground pipe insulation; Zonatile, a precast vermiculite concrete roof tile; Blo-Crete, vermiculite concrete sprayed on tanks and other industrial equipment; Insulpave, a roofing mixture of vermiculite and asphalt; and vermiculite concrete for floors and roof systems.

Tools, Materials, Services

Under this heading note will be made from time to time of producer literature of presumed technical interest (and available from its source for the asking) to ACI users of tools, equipment, materials, accessories and special services.

Automatic recorder for block production

An instrument which records output of automatic concrete block machines has been announced by the Foxboro Co. The instrument, a two-pen operation-time recorder, provides a complete and continuous chart record of batches mixed and block produced.

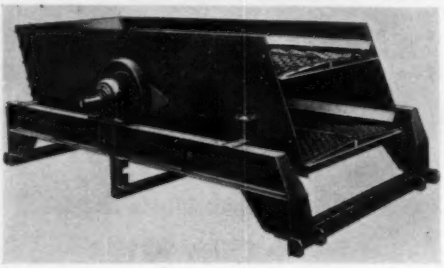


Typical application of automatic recorder to concrete block machine and batch mixer

In large plants where several automatic machines are in operation, the same instrument can be equipped with up to eight pens, covering complete plant output. An eight-digit counter can also be furnished, keeping a running total of individual machine production. Where the standard two-pen electric recorder is used, the batch recording pen is deflected each time a batch of aggregate from the mixer is dumped into the block machine. Also, when the block are formed and the motor propels each pallet through the machine, the second pen deflects, showing when finished block were removed. The chart record has a multiplicity of uses. As a bookkeeping aid, it shows how many batches were mixed and how many block were formed during any day or any shift. Production supervisors have an accurate record of machine performance, permitting them to analyze output. A data sheet, AED 320-6, describing the operation and use of this instrument is available.—Foxboro Co., Foxboro, Mass.

Safety handbook

The National Safety Council's new "Handbook of Accident Prevention for Business and Industry" is a convenient safety guide for the manager of a small business or the supervisor of a department in a large organization. The handbook shows how to set up and maintain a safety program. Detailed information is included on subjects such as plant layouts, materials handling, housekeeping, machine guarding, electrical hazards, pressure vessel hazards, first aid, fire prevention, and personal protective equipment. Advice to the small business man on how to make use of outside assistance such as service and insurance organizations, governmental agencies, trade associations, and professional societies is given.—National Safety Council, 425 N. Michigan Ave., Chicago 11, Ill.



Vibrating screens

Diamond Iron Works, Inc., announces production of a new series of vibrating screens. The 5-ft wide vibrating screens are available in 10, 12, and 14 ft lengths and offer a choice of 1, 2, 2½, or 3 decks. The manufacturer states that reinforcing of the side plates at the shaft eliminates vibration, and heavy steel plates between bearings double side plate strength. Plenty of headroom between decks is said to assure fast separation of material. The screens can be driven with either "V" or flat beltdrive and can be equipped with spray bars for washing sand and gravel.—Diamond Iron Works, Inc., 1748 N. Second St., Minneapolis 11, Minn.

Concrete curing

A new white concrete curing compound, Permite PW-40, has been announced by Aluminum Industries, Inc. It is a resin-wax base, white pigmented compound. This curing compound is also supplied in the clear form, Permite W-95.—Aluminum Industries, Inc., Paint and Varnish Division, 2438 Beekman St., Cincinnati 25, Ohio

Mechanical sieving

Versatility in sieve analysis of both fine and course materials are claimed for three new models of portable equipment announced by Rainhart Co. All models have capacities for up to 40-lb samples of crushed stone or the equivalent, and differ only in the type of motor used and enclosure of the unit. Six standard round sieves and a pan, in 6, 8, 10, 12 or 16-in. diameters, self-center on a terraced turntable and are held in place by four spring tensioned fasteners. Materials move continuously across the screen surfaces with a tumbling action, produced by an arrangement of two syncronized eccentric shafts imparting a circular motion in the vertical plane while the load is rotating slowly in the horizontal plane. The amplitude of agitation may be varied with the built-in speed control to achieve maximum efficiencies with various classes of materials. A floating counterweight is said to keep the mechanism balanced at all times and minimizes vibrations and noise.—Rainhart Co., P. O. Box 4065, Austin 51, Texas

Membership in the American Concrete Institute

If this issue of the ACI JOURNAL has been of interest and useful in your work and you are not already a member, assure yourself of receiving it regularly by completing and sending in the membership application form below. The grades of membership are described overleaf.

All who have an interest in concrete and a desire to improve it through a nonprofit educational service in gathering, correlating, and disseminating information on design, construction, manufacture, use, and maintenance of concrete structures and products are eligible for Institute membership.

There are many opportunities in the Institute for technical committee activity, contributions from your experience in technical papers and the briefer "Letters from Readers" section, and in reviewing technical literature. Thus you can help further ACI's aim "to provide a comradeship in finding the best ways to do concrete work of all kinds and in spreading that knowledge," and at the same time benefit from the experiences of other Members.

(cut here)

Board of Direction, American Concrete Institute
18263 W. McNichols Road
Detroit 19, Michigan

Date_____

Individual Members, North America and U. S. Possessions	**$15.00**
Individual Members elsewhere	**12.00**
Corporation Members	**50.00**
Contributing Members	**100.00**
Junior Members—nonvoting (under 28)	**7.50**
Student Members—nonvoting (under 28)	**5.00**

(Subject to stipulations of Bylaws—Article I on reverse side. Bylaws on request.)

Of the annual dues, $12.00 is for the JOURNAL of the American Concrete Institute (except that dues for Junior and Student Members apply in full for the JOURNAL).

The undersigned hereby applies for _____ **membership**
(Individual, Corporation, Contributing, Junior, Student)

in the American Concrete Institute. Proposed by_____

For Corporation Membership, ACI representative will be_____

_____ _____
(Date of graduation if Student) (Name, if Corporation)

Signature_____

For our records, please complete both sides of application.

EXCERPTS FROM BYLAWS: ARTICLE I—MEMBERS

Section 1. This Institute shall consist of Members, Corporation Members, Contributing Members, Junior Members, Student Members and Honorary Members interested in furthering the Institute's objects as set forth in its Charter.

Sec. 2. A Member shall be an individual.

A Corporation Member shall be a firm, corporation, society, agency of government or other organization. A Corporation Member shall name one individual as its representative who will enjoy all membership rights and privileges.

A Contributing Member shall be an individual, firm, corporation, society, agency of government or other organization wishing to give larger support to Institute activities through the payment of larger dues. Contributing Members, other than individuals, shall name representatives as do Corporation Members.

A Junior Member shall be a person less than 28 years old.

A Student Member shall be less than 28 years old and a student in residence at a recognized technical or engineering school.

An Honorary Member shall be a person of eminence in the field of the Institute's interest, or one who has performed extraordinarily meritorious service to the Institute.

Sec. 3. All classes of Members except Honorary Members and Student Members, shall be proposed by at least one Member of the Institute and elected by a two-thirds vote of the Board of Direction. An Honorary Member shall be elected by unanimous vote of the Board of Direction. A Student Member shall be proposed by a member of his school's faculty, who need not be a Member of the Institute, and elected by a two-thirds vote of the Board of Direction.

Sec. 4. All Members shall have all rights and privileges of membership as determined by the Board of Direction except that a Junior or Student Member shall not vote nor hold office. The status of a Student Member shall change automatically to that of Junior Member on the first anniversary of his membership succeeding the date on which he ceases to be a student in residence. The status of a Junior Member shall be changed to that of Member on the first anniversary of his membership after he becomes 28 years of age.

Sec. 5. Applications for and resignations from Membership and requests for change of representatives of Corporation or Contributing Memberships shall be presented in writing to the Secretary-Treasurer. Resignations may be accepted only from Members whose dues are not more than 60 days in arrears, except by special action of the Board of Direction.

(cut here)

Date of Birth_____
Month Day Year

Title or Position_____

Name of Firm or Organization_____

☐ **Business Address**_____

☐ **Resident Address** _____
(Please check address to which you wish mail and publications sent)

Nature of Firm's Business_____

Floor compaction

Kelly Machine Division, Wiesner-Rapp Co., announces bulletin No. K101 describing the Kelly Compactor power float. A description of the machine and its use as well as specifications for the different models are given.—Kelly Machine Division, Wiesner-Rapp Co., Inc., 1600 Seneca St., Buffalo 10, N. Y.

Deflocculating agents

Results of Monsanto Chemical Co. research seem to indicate that the use of sodium tripolyphosphate (STP) in the manufacture of cement permits reduction in water content while still maintaining pumpability or workability. Most of the industries where the addition of minute quantities of STP can be practically adapted are those processes using raw materials such as clay, limestone, or shale ground to a fine particle size. Water is added to permit easy movement of the solids from one stage of process to another. In the cement industry, the addition of STP is said to increase raw material grinding efficiency, reduce fuel consumption in the kilns, and improve pumping operations.—Phosphate Division, Monsanto Chemical Co., St. Louis 4, Mo.

Water repellent

A new material known as Dow Corning X 8-1 is said to make a wide variety of materials ranging from paper to clay water repellent. This product, a solution of sodium salts and certain silicones, may be easily diluted with water and applied by brush, spray, dip, or by mixing with paper or clay slurries. The manufacturer states that this product will prevent water from wetting such surfaces as masonry walls, clay or adobe buildings, and even dirt roads and irrigation ditches.—Dow Corning Corp., Midland, Mich.

Masonry drill

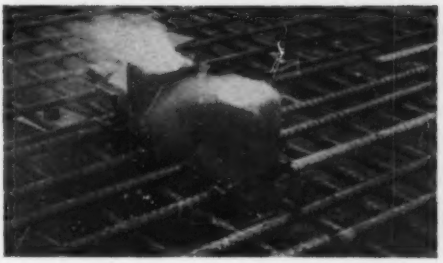
A new rotary concrete and masonry drill has been announced by Jet Drill Co. The drill is available in triple spiral-center cutting point in sizes from 3/16 to ½ in. and triple spiral core type with full slot sizes ⅝ to 2 in. The manufacturer states that the triple spiral provides triple dust exits while the full slot is engineered to eliminate drilled concrete, dust and powder quickly. The drill can be used with any electric or air rotary drill motor.—Jet Drill Co., P. O. Box X-2, Dana Point, Calif.

Pneumatic placement of concrete

Air Placement Equipment Co.'s latest brochure describes and illustrates the new Model No. 750 and No. 1250 Bondactors. The leaflet ontains a detailed explanation of the "gunned" or "air placed" concrete and aggregate principle. Application photographs show equipment in use on actual jobs. Recommended uses in the construction, repair and maintenance fields are also listed.—Air Placement Equipment Co., 1011 West 24th St., Kansas City 8, Mo.

Rubber hose care

A bulletin on care of rubber hose has been issued by Hewitt-Robins Inc. Called "Tips on Hose Care," the bulletin tells what to do and what not to do in the use and storage of various kinds of hose, including steam, fire, oil, gasoline, water, air, suction, and sandblast hose.—Hewitt-Robbins. Inc., 240 Kensington Ave., Buffalo 5, N. Y.



Thermit welding of 1¼-in. reinforcing bars for pier of Tappan Zee bridge on New York State Thruway

Welding of reinforcing

Development of a new method for the joining of reinforcing bars into long, continuous lengths has been announced by Metal and Thermit Corp. Essentially a simplification of the Thermit welding process, the new method is said to be speedier and more economical than

Completed welds on reinforcing bars for floor of bridge pier

electric arc welding or other methods. It has been field tested by Corbetta Construction Co. in construction of the piers on the Tappan Zee bridge of the New York State Thruway where approximately a thousand welds meeting the requirements of New York state engineers were made. Briefly, the procedure consists of trimming the reinforcing bar ends with a gas cutting torch, spacing them ½ to ⅝ in. apart, clamping a preformed mold around the joint, filling the mold with Thermit and igniting. Thirty seconds later the weld is completed.—Metal and Thermit Corp., 100 East 42nd St., New York 17, N. Y.

Perlite concrete

New data for design of roof deck insulation, lightweight floor fill, and precast slabs and block is contained in a revised mix design chart for perlite concrete released by the Perlite Institute. The new mix design information is part of a specification for perlite concrete recently adopted by the 49 perlite producing members of the Institute. A separate specification for the mixing and placement of perlite concrete roof deck insulation which is approved for use under bonded, built-up roofing has also been established.—Perlite Institute, 10 E. 40th St., New York 16, N. Y.

ALPHABETICAL LIST OF ADVERTISERS

(Page numbers refer to News Letter)

Autolene Lubricants Company....10
Bethlehem Steel Company....11
Coff, L....25
Collins & Associates, F. Thomas....15
Concrete Reinforcing Steel Institute.... 9
Dewey and Almy Chemical Company....13
Fuller Company....16
Intrusion-Prepakt, Inc.... 2
Jackson & Moreland....25
Jewell, K. Austin....25
Lone Star Cement Corporation....Inside front cover
Techkote Company....19
Thompson & Lichtner Co., Inc., The....25
Vacuum Concrete, Inc....22
Watts, Charles R. and Company.... 8
Wiley & Sons, John....12

The Institute assumes no responsibility for the claims of advertisers. The advertiser is made responsible in the belief that his place in the field will be determined by the public's ultimate measure of his exercise of that responsibility.

DISCUSSION

Discussion closes January 1, 1954

Sept. Jl. '53

Minimum Standard Requirements for Precast Concrete Floor Units—Committee 711

Concrete for Radiation Shielding—Edwin J. Callan

Absorption by Concrete of X-Rays and Gamma Rays—B. E. Foster

Effect of Sustained Overload on the Strength and Plastic Flow of Reinforced Concrete Beams—G. W. Washa and P. G. Fluck

Economical Design of Prestressed Concrete Beams—David P. Billington